

CLAIMS

WHAT IS CLAIMED:

- 5 1. A medical device for detecting and treating sleep respiratory events, comprising:
 - a plurality of sensors gathering physiological data related to sleep respiratory events; and
 - 10 a processor extracting an average cycle length and a frequency of at least one of Cheyne-Stokes respiration and periodic breathing based upon the physiological data, and determining whether therapy is required based on the average cycle length and the frequency.
- 15 2. The medical device of claim 1, wherein the plurality of sensors include at least one of an intracardiac impedance sensor, an intrathoracic impedance sensor, a body movement sensor, an oxygen sensor, and a pressure sensor.
- 20 3. The medical device of claim 1, wherein the therapy includes overdrive pacing.
- 25 4. The medical device of claim 1, wherein the therapy includes hypoglossal nerve stimulation.
5. The medical device of claim 1, further comprising a memory unit storing and updating the sleep respiratory events.
- 30 6. The medical device of claim 5, wherein the memory unit stores wake events corresponding to the sleep respiratory events.

7. The medical device of claim 6, wherein the processor determines whether therapy is required based on a predetermined apnea hypopnea index.

5 8. The medical device of claim 7, wherein the predetermined apnea hypopnea index is 15.

9. A medical device for detecting and treating sleep respiratory events, comprising:

10 a plurality of sensors gathering physiological data related to sleep respiratory events;
a processor extracting an average cycle length and a frequency of at least one of Cheyne-Stokes respiration and periodic breathing based upon the physiological data, and determining whether therapy is required based on the average cycle length and the frequency; and

15 15 a memory unit storing and updating the sleep respiratory events, wherein the plurality of sensors include at least one of an intracardiac impedance sensor, an intrathoracic impedance sensor, a body movement sensor, an oxygen sensor, and a pressure sensor, and wherein the therapy includes one of overdrive pacing and hypoglossal nerve stimulation.

20 10. The medical device of claim 9, wherein the memory unit stores wake events corresponding to the sleep respiratory events.

25 11. The medical device of claim 10, wherein the processor determines whether therapy is required based on a predetermined apnea hypopnea index.

30 12. The medical device of claim 11, wherein the predetermined apnea hypopnea index is 15.